

## Project Design Phase-II Technology Stack (Architecture & Stack)

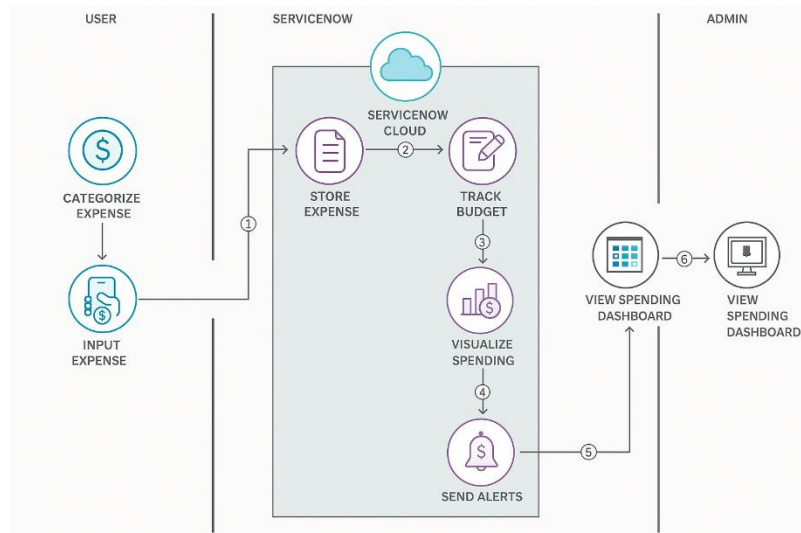
Date	02 NOVEMBER 2025
Team ID	NM2025TMID06595
Project Name	Calculating Family Expenses using Service Now
Maximum Marks	4 Marks

### Technical Architecture:

The deliverable shall include the architectural diagram as below and the information as per **Table 1** and **Table 2**.

**Example: Calculating Family Expenses using ServiceNow**

**Reference:** <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



### Guidelines:

- Include all major modules as individual logic or technology blocks.
- Provide infrastructure demarcation between **local** and **cloud** systems.
- Indicate external interfaces for integration with APIs or external tools.
- Specify data storage components and any automated data validation services.
- Highlight ServiceNow workflows used for automation, alerts, and dashboards.

**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	Family members interact via a web-based ServiceNow dashboard to input and view expenses.	ServiceNow Web UI
2.	Application Logic-1	Automates expense recording, categorization (e.g., groceries, utilities, transport).	ServiceNow Flow Designer, Script
3.	Application Logic-2	Tracks monthly budgets and alerts users when limits are exceeded.	Business Rules, Scheduled Jobs
4.	Application Logic-3	Generates visual dashboards summarizing spending trends and reports.	ServiceNow Performance Analytics, UI Pages
5.	Database	Stores family member profiles, expenses, and budget data.	ServiceNow CMDB, CustomTables
6.	Cloud Database	Managed through the ServiceNow cloud environment for scalability and security.	ServiceNow Cloud Database
7.	File Storage	Stores generated reports and exported financial summaries.	ServiceNow system logs
8.	External API-1	Integration with third-party finance tools or currency converters.	REST API in ServiceNow
9.	External API-2	Integration with email/SMS for budget notifications	Notification API
10.	Machine Learning Model	Predicts future expenses based on spending patterns.	ServiceNow Predictive Intelligence (Optional)
11.	Infrastructure (Server / Cloud)	Hosted and managed on ServiceNow SaaS platform	ServiceNow Cloud (SaaS)

**Table-2: Application Characteristics:**

<b>S.No</b>	<b>Characteristics</b>	<b>Description</b>	<b>Technology</b>
1.	Open-Source Frameworks	Not applicable (ServiceNow is proprietary)	-
2.	Security Implementations	Role-based access for each family member, ACLs for sensitive financial data.	ACLs, Scoped Applications
3.	Scalable Architecture	SaaS-based, horizontally scalable via ServiceNow architecture	ServiceNow Cloud Architecture
4.	Availability	Highly available with ServiceNow cloud hosting	Load-balanced ServiceNow Instances
5.	Performance	Optimized via asynchronous flows and indexed tables	GlideRecord, Background Scripts